REMARKS

Claims 1, 2, 5-12, 14-26, 29-36 and 38-47 remain pending in the above-identified application and have been rejected. Claims 48-50 have been withdrawn from consideration. Claims 1, 25, 38 and 47 have been amended. These remarks have been prepared at least partially with reference to the Interview with the Examiner on January 12, 2006. Applicant wishes to extend appreciation to the Examiner for affording his time to applicant and applicant's counsel.

Claim 38 stands rejected under 35 U.S.C. § 112, second paragraph as being indefinite for depending from a canceled claim (claim 37). Claim 38 has been amended to claim dependency from claim 25, thereby obviating this rejection.

Claims 1, 2, 5, 6, 8, 10, 12, 14, 15, 17 and 20-24 stand rejected under 35 U.S.C. § 103 as being unpatentable over Shields in view of Kang. Applicant respectfully traverses the rejection.

Claim 1 recites a gas sensor device that includes, among other features, "a semiconductor layer having a surface", "one or more catalytic gate-electrodes contacting said surface" "one or more ohmic contacts contacting said surface" and "a passivation layer covering only at least a portion of said surface". With regard to the last listed element, it should be appreciated that the passivation layer covers at least a portion of the semiconductor surface and nothing else. The use of the term "only" is intended to make clear that the passivation layer only covers a portion of the semiconductor surface and does not cover any other surfaces or device structures or elements.

As the Office action states, Shields fails to teach or suggest a passivation layer. Kang, however, teaches a passivation layer 13 that covers an entire sensing structure 12. The sensing structure 12 thus covered is essentially a temperature sensor, not a gas sensor device as recited in claim 1. More importantly, the passivation layer 13 of Kang covers not only a portion of the surface of the layer 20, it also covers the sensing structure 12 and each of its device elements. Thus, neither Shields nor Kang teach or suggest a gas sensor device including "a passivation layer covering only at least a portion of said surface" as recited in claim 1.

Claims 7 and 9 stand rejected under 35 U.S.C. § 103 as being unpatentable over Shields in view of Kang and Sibbald. Claim 11 stands rejected under 35 U.S.C. § 103 as being unpatentable over Shields in view of Kang and Onaga. Claim 16 stands rejected under 35 U.S.C. § 103 as being unpatentable over Shields in view of Kang and Khan. Claim 19 stands rejected under 35 U.S.C. § 103 as being unpatentable over Shields in view of Kang and Najafi. Applicant respectfully traverses these rejections.

Claims 7, 9, 11, 16 and 19 depend from claim 1. The arguments provided above with regard to Shields and Kang are equally applicable to the instant rejections. Sibbald is relied upon in the Office action as teaching the use of osmium, platinum/rhodium, vanadium oxide, or mixtures thereof as a catalytically active metal. Onaga is relied upon in the Office action as teaching the use of lanthanium metal oxide as a catalytically active metal. Khan is relied upon in the Office action as teaching the use of a heterostructure barrier layer in the MISFET to form a MISHFET. Najafi is relied upon in the Office action as teaching the use of a flip-chip design. Neither Sibbald, Onaga, Khan, nor Najafi, either alone or in combination, teach or suggest a gas sensor device having "a passivation layer covering only at least a portion of said surface" as recited in claim 1.

Claims 18, 25, 26, 29, 30, 32, 34, 36, 38, 40, 41 and 43-46 stand rejected under 35 U.S.C. § 103 as being unpatentable over Shields in view of Kang and von Windheim. Applicant respectfully traverses the rejection.

Claim 18 depends from claim 1. Claim 25, from which depend claims 26, 29, 30, 32, 34, 36, 38, 40, 41 and 43-46, recites a gas sensor device that includes, among other elements, "a semiconductor substrate having a surface" and "a passivation layer covering only at least a portion of said surface".

As argued above, Shields and Kang fail to teach or suggest a gas sensor device including "a passivation layer covering only at least a portion of said surface" as recited in claims 1 and 25. The von Windheim reference is relied upon in the Office action as teaching an encapsulation layer for a FET gas sensor. The von Windheim reference fails to teach or suggest a gas sensor device

having "a passivation layer covering only at least a portion of said surface" as recited in claims 1 and 25.

Claims 31 and 33 stand rejected under 35 U.S.C. § 103 as being unpatentable over Shields in view of Kang, von Windheim and Sibbald. Claim 35 stands rejected under 35 U.S.C. § 103 as being unpatentable over Shields in view of Kang, von Windheim and Onaga. Applicant respectfully traverses these rejections.

Claims 31, 33 and 35 depend from claim 25. As noted above, none of the cited references, either alone or in combination, teach or suggest a gas sensor device including, among other elements, "a passivation layer covering only at least a portion of said surface".

Claims 42 and 47 stand rejected under 35 U.S.C. § 103 as being unpatentable over Shields in view of Kang, von Windheim and Najafi. Applicant respectfully traverses the rejection.

Claim 42 depends from claim 25. Claim 47 recites a gas sensor device that includes, among other elements, "a semiconductor substrate having a surface" and "a passivation layer covering only at least a portion of said surface". As noted above, none of the references, either alone or in combination, teach or suggest a gas sensor device that includes "a passivation layer covering only at least a portion of said surface" as recited in claims 25 and 47.

Applicant believes that each and every claim pending in the instant patent application is allowable over the cited references. Should the Examiner believe that anything further is needed to place the application in even better condition for allowance, the Examiner is requested to contact applicant's undersigned representative at the telephone number below.

Respectfully submitted,

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